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| EXAMINER | |
|---|---|
| BOWERS, NATHAN ANDREW | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 1744 | |

DATE MAILED: 02/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/724,627 | SU, WEN-WEI | |
| | Examiner | Art Unit | |
| | Nathan A. Bowers | 1744 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *02 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *02 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 6, 14, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicant states key structural elements in the claim preambles, but does not positively cite them in the claim body. Since the claim preambles are essentially intended use statements, the cited structures carry little weight in examining the claims. Specifically, applicant discloses "reaction equipment" and "a portable alarm" in the preambles of claims 1 and 14, but does not positively claim "reaction equipment" and "a portable alarm" in the claim bodies. Likewise, applicant discloses "reaction equipment" in the preambles of claims 6 and 21, but does not positively claim "reaction equipment" and in the claim bodies. This is problematic since these important structural features are referenced in subsequent dependent claims. Accordingly, applicant cannot claim that "the reaction equipment is a chemical reaction equipment, a fermentation reaction equipment..." in claim 4, for example, without first positively claiming the reaction equipment in claim 1. This critical omission has significant consequences in how each succeeding dependent claim is interpreted. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1) Claims 1-3, 6-7, 9, 10, 12-17, 19, 21-24 and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Han (US 20020042065).

With respect to claims 1, 6, 14 and 21, Han discloses a monitoring device used in reaction equipment for detecting the presence of a variety of biochemical analytes in a sample. Table 1 lists a plurality of potential analytes that are detected by the disclosed invention. Paragraphs [0083]-[0089] indicate that the monitoring device comprises a detector (Figure 15:10), an abnormal state assertor (Figure 15:108) for determining when the output from the detector is in the range of an abnormal state, and a wireless signal emitter (Figure 15:112a) in communication with the abnormal state asserter. The signal emitter transmits a wireless signal to a cellular phone (Figure 15:114) when receiving an abnormal signal from the abnormal state asserter. The cellular phone functions as a portable alarm since it is used to get the attention of an operator when undesirable analyte concentrations are detected.

With respect to claims 2, 7, 15 and 22, Han discloses the apparatus in claims 1, 6, 14 and 21 wherein the detector is an online real-time analytical sampling device detector. Paragraphs [0012], [0062] and [0103] disclose one sensor embodiment that is designed to constantly monitor a patient's blood in order to determine glucose concentration. The sensor is capable of measuring the concentrations of any of the analytes in Table 1 continuously in real-time.

With respect to claims 3, 17 and 24, Han discloses the apparatus in claims 1, 14 and 21 wherein the abnormal state assertor gives the abnormal signal only when the detected value exceeds a normal range. Han indicates in paragraphs [0072] and [0073] that the alarm is activated by the abnormal state assertor only when unusual analyte levels are detected by the sensor.

With respect to claim 9, Han discloses the apparatus in claim 6 wherein the portable alarm comprises a warning signal generator giving a warning signal in response to the abnormal signal. The telephones disclosed by Han inherently utilize a ringing or vibration function to capture the attention of a user when activated by the wireless signal emitter. In order to produce a ringing sound or vibrational motion, the telephone must further include a warning signal generator.

With respect to claim 10, 19 and 26, Han discloses the apparatus in claims 9, 14 and 21 wherein the portable alarm comprises a display showing corresponding abnormal information in response to the abnormal signal. In paragraphs [0108] and [0100], Han states that telephones not only ring in alarm, but also display text messages

describing the alarm status. Paragraph [0086] indicates that other types of remote communication devices, such as email, are used in order to transmit alarm information.

With respect to claims 12 and 13, Han discloses the apparatus in claim 6 wherein a computer (Figure 15:108 and Figure 16:270) is provided for receiving and recording the detected value and the abnormal signal. The computer is connected to the detector and the signal emitter by wired or wireless signal transmission. This is disclosed in paragraphs [0101]-[0103].

2) Claims 1-7, 9-17, 19-24, 26 and 27 are rejected under 35 U.S.C. 102(e) as being anticipated by Glenn (US 20050083197).

With respect to claims 1, 6, 14 and 21, Glenn discloses a monitoring device used in reaction equipment (Figure 1:12) for monitoring a variety of parameters. A detector (Figure 1:14, 16, 18) outputs detected values to an abnormal state assertor (Figure 1:21) which is capable of determining if the reaction equipment is operating under an abnormal state. A wireless signal emitter (Figure 1:20) is in communication with the abnormal state asserter, and is used to transmit a wireless signal to a remote computer (Figure 1:28) that emits a visual and audible alarm when an undesirable condition is determined by the abnormal state asserter. This is disclosed in paragraphs [0014]-[0027] and [0040]-[0049].

With respect to claims 2, 7, 15 and 22, Glenn discloses the apparatus in claims 1, 6, 14 and 21 wherein the detector is a pH value, temperature, or liquid level detector. This is disclosed in paragraph [0041].

With respect to claims 3, 17 and 24, Glenn discloses the apparatus in claims 1, 14 and 21 wherein the abnormal state assertor gives the abnormal signal only when the detected value exceeds a normal range. Glenn indicates in paragraph [0049] that the alarm is activated by the abnormal state assertor only when unusual parameter values are detected by the sensor.

With respect to claims 9, 10, 19 and 26, Glenn discloses the apparatus in claims 6, 14 and 21 wherein the portable alarm comprises a warning signal generator that gives an audible warning signal in response to the abnormal signal. The portable alarm further comprises a display (Figure 7) for visually representing alarm information. This is disclosed in paragraphs [0025]-[0027], [0049], and [0104].

With respect to claims 5, 11, 20 and 27, Glenn discloses the apparatus in claims 1, 10, 19 and 26 wherein the portable alarm includes an input device that allows the user to input instructions to a wireless control signal generator. The signal generator transmits the instructions back to the reaction equipment in order to make adjustments that will rectify the problem that triggered the alarm. In paragraph [0051], Glenn states that instructional codes, in response to the alarm, are sent back to the reaction equipment, and are capable of remedying the problematic situation. Although Glenn does not expressly state that he instructional codes are input from an operator at the portable alarm unit, this is strongly implied since Glenn states in paragraph [0003] that it is not feasible to have people onsite to make corrections.

With respect to claims 12 and 13, Glenn discloses the apparatus in claim 6 wherein a computer (Figure 1:26) is provided for receiving and recording the detected

value and the abnormal signal. The computer is connected to the detector and the signal emitter by wired or wireless signal transmission, and is used to transmit data to the portable alarm device. This is disclosed in paragraphs [0040]-[0049].

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3) Claims 4, 8, 18 and 25 rejected under 35 U.S.C. 103(a) as being unpatentable over Han (US 20020042065) as applied to claims 1, 6, 14 and 21, and further in view of Cannon (US 20020146817).

Han discloses the apparatus as set forth in claims 1, 6, 14 and 21 as set forth in the 35 U.S.C. 103 rejection above, however does not fully describe the nature of the reaction equipment within which the detector is placed.

Cannon discloses chemical reaction equipment, and, more specifically, fermentation reaction equipment. Cannon teaches in paragraphs [0052] and [0053] that the operation of a bioreactor (Figure 6:10) is regulated by a detector (Figure 6:13). Paragraph [0069] teaches that the detector is used to detect glucose, pH levels, dissolved oxygen content, or any other parameter pertinent to fermentation procedures. Paragraphs [0085] and [0086] state that the detector is in communication with a computer controller that is capable of determining whether or not the fermentation

system is operating under abnormal conditions. An alarm is used to automatically alert an operator if undesirable conditions are detected.

Han and Cannon are analogous art because they are from the same field of endeavor regarding the detection of biological analytes.

At the time of the invention, it would have been obvious to utilize the monitoring device (detector, abnormal state asserter, wireless signal emitter, portable alarm) within the fermentation system disclosed by Cannon. In paragraph [0014] and throughout the reference, Cannon asserts that it is well known in the art to incorporate monitoring devices into chemical reaction and fermentation systems. Cannon states in paragraph [0008] that there is a great need in the field of fermentation for the use of automatic control systems that are capable of regulating a process in a precise and consistent manner according to predetermined protocol. Since bioreactor systems require that a plurality of important analytes are constantly detected and monitored, it would have been obvious to use Han's monitoring device and control system to regulate the operation of fermentation reaction equipment.

***Double Patenting***

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., In re Berg, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); In re Goodman, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); In re Longi, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); In re Van Ornum, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); In re Vogel, 422

F.2d 438, 164 USPQ 619 (CCPA 1970); and In re Thorington, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 2, 3 and 14-18 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-3, 5, 6 and 7-9 of copending Application No. 10724717 in view of either Han (US 20020042065) or Glenn (US 20050083197).

Copending Application No. 10724717 discloses a monitoring device to be used in reaction equipment comprising a detector, an abnormal state assertor, and a signal transmission channel. The monitoring device can be applied to a number of different functions. The copending application, however, does not state that the signal transmission channel facilitates wireless communication.

Han discloses a monitoring device used in reaction equipment for detecting the presence of a variety of biochemical analytes in a sample. Paragraphs [0083]-[0089] indicate that the monitoring device comprises a detector (Figure 15:10), an abnormal state assertor (Figure 15:108) for determining when the output from the detector is in the range of an abnormal state, and a wireless signal emitter (Figure 15:112a) in communication with the abnormal state asserter.

Glenn discloses a monitoring device used in reaction equipment (Figure 1:12) for monitoring a variety of parameters. A detector (Figure 1:14, 16, 18) outputs detected

values to an abnormal state assertor (Figure 1:21) which is capable of determining if the reaction equipment is operating under an abnormal state. A wireless signal emitter (Figure 1:20) is in communication with the abnormal state asserter, and is used to transmit a wireless signal to a remote computer (Figure 1:28).

At the time of the invention, it would have been obvious to use the invention cited in Application No. 10724717 to transmit information to a remote location through a wireless signal emitter, rather than through a cable. Glenn teaches in paragraphs [0002]-[0013] that wireless communications are advantage because they allow one to more easily and cost effectively monitor reaction equipment. Wireless communications allow associated alarms and control devices to be more portable, so that an operator can carry monitoring equipment and quickly alter system operations from a distance.

This is a provisional obviousness-type double patenting rejection.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The West (US 20050112542), Ishii (US 20020022260), Irwin (US 6937148), Yun (US 6502505) and Blumenfeld (US 6300124) references teach the state of the art regarding monitoring devices and control systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nathan A. Bowers whose telephone number is (571) 272-8613. The examiner can normally be reached on Monday-Friday 8 AM to 5 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

NAB

WILLIAM H. BEISNER
PRIMARY EXAMINER
GROUP 1744